WE CLAIM:

[C1] A method for increasing *Agrobacterium* transformation frequencies in a host plant, said method comprising:

a. increasing histone levels in the host plant compared to normal levels of histone in the host plant; and

b. transforming the host plant with *Agrobacterium*.

[C2] The method of claim 1, wherein the histone is an H2A histone.

[C3] The method of claim 2 wherein the H2A histone is encoded by *Arabidopsis RAT5*.

[C4] The method of claim 1 wherein transformation frequencies are measured by the number of tumors produced in the host plant.

[C5] The method of claim 2, wherein the H2A histone is H2A-1.

[C6] A plant cell with an overexpression of plant histones sufficient to increase efficiency of transformation of the plant cell by *Agrobacterium*.

[C7] The plant cell of claim 6 wherein the plant histones are of the H2A histone family.

[C8] The plant cell of claim 7 wherein an H2A histone is encoded by *Arabidopsis RAT5*.

[C9] A method of increasing *Agrobacterium* transformation frequencies in a host plant, the method comprising:

(a) introducing at least one copy of a polynucleotide sequence encoding a plant histone protein to the host plant;

(b) selecting a host plant expressing the polynucleotide sequence encoding a plant histone protein; and

(c) transforming the host plant expressing the polynucleotide sequence encoding a plant histone protein with a DNA molecule of interest using *Agrobacterium*.

[C10] The method of claim 9, wherein the host plant is a monocot plant.

[C11] The method of claim 10, wherein the monocot plant is maize.

[C12] The method of claim 9, wherein the polynucleotide sequence encoding a plant histone protein is a member of an H2A gene family of *Arabidopsis*.

[C13] The method of claim 12, wherein the member of the H2A gene family of Arabidopsis is *RAT5*.

[C14] The method of claim 10 further comprising adding L-cysteine to media used in cultivating the host plant.

[C15] A transgenic plant comprising at least one additional copy of a polynucleotide sequence encoding a plant histone H2A protein.

[C16] A method for increasing stable *Agrobacterium* transformation efficiency in monocot host plants, the method comprising:

(a) selecting a host plant expressing a polynucleotide sequence encoding a plant histone H2A protein;

(b) infecting the host plant with a DNA molecule of interest by infection with an *Agrobacterium* strain;

(c) providing at least one antioxidant in a cocultivation medium;

(d) selecting the infected cells for transformants expressing the DNA molecule of interest.

[C17] The method of claim 16, wherein the monocot plant is maize.

[C18] The method of claim 16, wherein the antioxidant is L-cysteine.

[C19] The method of claim 18, wherein the L-cysteine is at a concentration about between 100 mg/L and 400 mg/L of cocultivation media.

[C20] The method of claim 16, wherein the infecting of the host plant in the cocultivation medium is for about 3 days.

[C21] The method of claim 16 wherein the host plant is an embryo.

[C22] A genetic construct comprising at least one copy of a histone gene that when expressed is capable of increasing transformation frequencies in a host plant.

[C23] The genetic construct of claim 22, wherein the histone gene is H2A.

[C24] A host cell transformed by at least one copy of a gene involved in T-cell integration wherein the gene is capable of effecting overexpression of histone to enhance plant transformation frequencies.

[C25] The host cell of claim 24, wherein the gene is the *RAT5* gene of *Arabidopsis*.